IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner	:	Patricia A. Duffy
Art Unit	:	1646
Applicants	:	Martin John Glenton Hughes, Joseph David Santangelo, Jonathan Douglas Lane, Robert Graham Feldman, Joanne Christine Moore, Richard James Dobson, Paul Howard Everest, Caroline Joanne Henwood, Gordon Dougan, Rebecca Kerry Wilson
Serial No.	:	09/868,195
Filed	:	June 15, 2001
For	:	NADP-dependent Glyceraldehyde-3-Phosphate Dehydrogenase For Therapeutic Use

MS AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF JOANNE MOORE UNDER 37 C.F.R. § 1.132

Sir:

I, Joanne Moore, of Microscience Limited, 545 Eskdale Road, Winnersh Triangle, Wokingham, Bershire, RG41 5TU, United Kingdom, hereby declare:

THAT, my *curriculum vitae* is attached hereto as Exhibit A;

THAT, I am a named inventor on the above-referenced patent application;

THAT, I have read and understood the specification and claims of the subject application and the Office Action dated April 21, 2004;

AND, being thus duly qualified, do further declare:

1. The present invention is based on the finding that the protein NADP-dependent Glyceraldehyde-3-phosphate Dehydrogenase is a surprisingly good candidate for use as a vaccine against a Group B Streptococcal (GBS) infection.

2. The protein was identified as a vaccine candidate on the basis of studies carried out to identify proteins that exist on the outer surface of a Group B Streptococcal microorganism.

3. Having identified NADP-dependent Glyceraldehyde-3-phosphate Dehydrogenase (MS10) as being located on the outer surface of the microorganism, the protein was tested for its ability to provide a protective effect upon GBS infection.

4. The protein (MS10) was used as an antigen in a vaccine composition to immunize New Zealand white rabbits, with pre-immune sera being harvested prior to immunization. Following a boost, the rabbits were sacrificed and sera collected. IgG purified from this sera was used in animal protection studies.

5. Rat pups were inoculated with the IgG obtained using the protein (MS10), and also controls were carried out using rat pups inoculated with either phosphate buffered saline (PBS) or IgG purified from the sera raised against wild-type Group B Streptococcus, ATP-binding transport protein (ME-P22), yutD protein (ME-P31), and N-acetylmuramidase (pho3-9). The rat pups were then challenged with 1.2 x 105 cfu/50 µl of the A909 strain of GBS.

6. The results are shown in Table 1 (below) and Figure 1 (attached hereto as Exhibit B) and show that the IgG obtained from inoculation with NADP-dependent Glyceraldehyde-3-phosphate Dehydrogenase provided survival for 52% of the rat pups, whereas the negative control provided only 14% survival and other isolated peptides provided from 21%-43% survival. This is a significant protective effect.

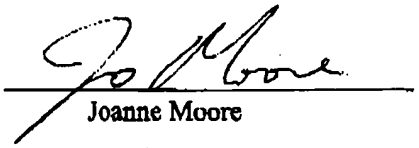
Table 1. The number of rat pups sacrificed over time

IgG from anti-sera raised against:	Total no. of rat pups	Number of rat pups that were sacrificed 14 to 64 hours after GBS challenge									Total no. of pups sacrificed after 63 hours	% pups that survived after 63 hours
		13.5	15	16.5	18.75	20.5	23	39	42.75	63		
PBS	28	15	2	3	3	0	1	0	0	0	24	14
WC GBS	29	0	0	0	0	0	0	0	0	0	0	100
MS 10	29	5	6	2	0	0	1	0	0	0	14	52
ME-P22	29	6	6	0	2	0	1	2	0	0	17	41
ME-P31	28	4	6	2	2	0	0	2	0	0	16	43
Pho3-9	29	9	4	0	4	1	5	0	0	0	23	21

7. The results show that the NADP-dependent Glyceraldehyde-3-phosphate Dehydrogenase protein provides an advantageous level of protection compared to other isolated GBS proteins.

The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or of any patent issuing thereon.

Further declarant sayeth naught.

Signed: 

Joanne Moore

Date: 19/10/04

Jo Moore

Profile:

Project Manager with 5 years experience in biotechnology vaccine development, 3 of those years in programme management, managing discovery, pre-clinical, and clinical development projects. Qualified cellular pathologist with several publications in peer reviewed journals. An excellent communicator and organiser, with proven interpersonal management skills.

Personal Details:

10 York Rd, Reading, Berks, RG1 8DX
Home: 0118 9583493
Mobile: 07944 027841
Email: jo_moore18@yahoo.co.uk
Date of Birth: 6th January 1976

Career Achievements:

- Successfully led the Group B Streptococcus (GBS) vaccine project from Discovery into Preclinical development.
- Successfully led two vaccine programmes from Preclinical to Phase I clinical stage ensuring defined milestones were achieved
- Played a major role in defining and implementing the development strategy on GBS and Meningitis projects. Presented rational for strategy to senior management and obtained their buy-in
- Organised a pivotal Product Development Advisory Group meeting (consisting of key opinion leaders) to discuss clinical plans and regulatory strategy
- Led interactions with the commercial function to define Target Product Profile

Professional Experience:

Project Manager, Microscience Ltd June 2001-present
Responsibility for planning, co-ordinating and budgeting GBS and Meningitis Vaccine Discovery and Development programmes. Management of multi-disciplinary development teams and involved in defining and implementation of strategy for projects.

- Leading the project teams consisting of functional representatives
- Attendance of conferences to keep abreast of therapeutic advances
- Presenting to the scientific advisory board and the company
- Development and implementation of development strategies
- Recommendation of strategies to deal with development issues
- Leading interactions with external experts and collaborators including NIH
- Production and maintenance of project plans.

- Forecasting, re-forecasting and management of project budgets
- Highlighting risks and assumptions built into the projects to the executive committee
- Selection of Phase 1 CRO's
- Co-ordinating completion of CTX submissions
- Writing sections of the IB

Junior Project Manager, Microscience Ltd Feb 2001-June 2001
Pre-clinical development phase of GBS project.

- Facilitating the projects movement from Discovery into Preclinical development working towards a Phase I clinical trial
- Reporting of scientific findings to senior management.
- Responsibility for the GBS budget
- Contact point for contract manufacturers
- Recruitment and supervision of scientists
- Writing controlled technical scientific reports required for support of regulatory submissions

Research Assistant, Microscience Ltd Nov 1998 – Jan 2001
Discovery and Preclinical development phase of GBS project

- Attainment of an animal-handling license
- Development of an animal model for GBS infection
- Development of quantitative ELISAs
- Development of protein purification techniques
- Writing SOP's and helping implement a quality system within the company

Management Skills:

- Project Planning (all MS office including Microsoft Project)
- Scheduling, resourcing, budgeting
- Risk assessment
- Conflict management

Education:
University Of Bristol 1994-1997
BSc Hons Cellular & Molecular Pathology (2:1)
Final year project: Cloning and Expression of a Single Chain Antibody against the L1 Adhesion Molecule.

Hemel Hempstead School 1992-1994
'A' Levels: Biology (A), Chemistry (B), Geography (B), General Studies (C)

Interests:

I travelled around Australia for a year in 97, which included working on a banana farm, charity work & being a receptionist at various hostels.
I am a keen squash and badminton player and have recently completed a photography course.

References:

Available on request.

Publications:

M J G Hughes, *et al.* Novel protein vaccine candidates against Group B Streptococcal infection identified using alkaline phosphatase fusions. (2003) FEMS letters. in press.

M J G Hughes, *et al.* Identification or Major Outer Surface Proteins of Streptococcus agalactiae. (2002) Infection and Immunity. 70, p1254-1259.

J C Moore, *et al.* Age dependant presence of antibodies in rat dams, capable of conferring protection against Group B Streptococcus in neonates (2001). FEMS letters. 202, p125-127.

J C Moore, *et al.* Characterization of the complement of outer surface proteins of Group B Streptococcus. American Society of Microbiology, LA 2000

M J G Hughes, *et al.* Group B Streptococcus Vaccine Candidates Identified Through Signal Sequence Screening. American Society of Microbiology, LA 2000

M J G Hughes, *et al.* Characterization of the complement of outer surface proteins of Group B Streptococcus. Lancefield Streptococcal Symposium Auckland 1999

Intellectual Property:

Hughes *et al.* Outer surface proteins and their use. App No WO 0037490
Hughes *et al.* Genes, proteins and their use. App No WO 0037646

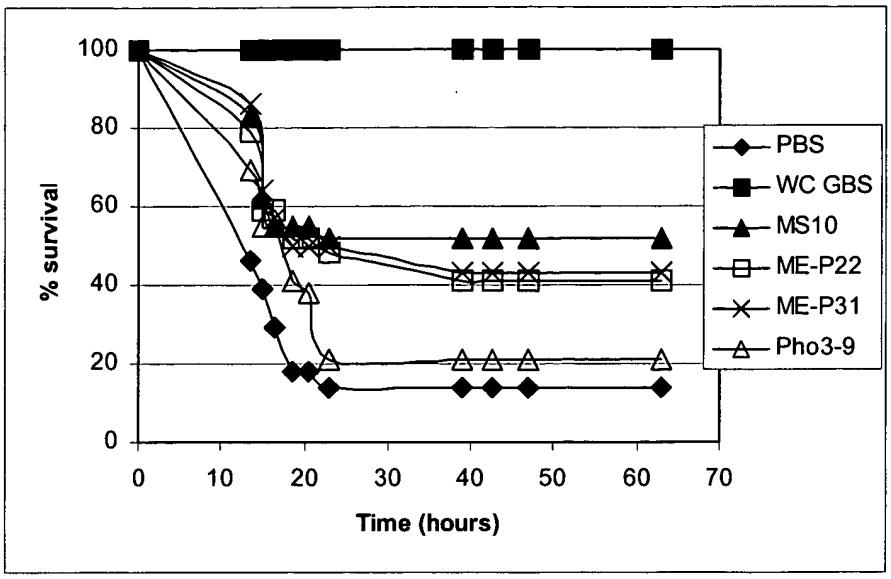

100
80
60
40
20
0
% survival
0
10
20
30
40
50
60
70
Time (hours)
PBS
WC GBS
MS10
ME-P22
ME-P31
Pho3-9

Figure 1

COPY

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING SUBMISSION OR TRANSMITTAL OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

GILL JENNINGS & EVERY
Broadgate House
7 Eldon Street
London EC2M 7LH
ROYAUME-UNI

Date of mailing (day/month/year) 22 February 2000 (22.02.00)	
Applicant's or agent's file reference REP06969WO	**IMPORTANT NOTIFICATION**
International application No. PCT/GB99/04376	International filing date (day/month/year) 22 December 1999 (22.12.99)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 22 December 1998 (22.12.98)
Applicant MICROSCIENCE LIMITED et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).

2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.

3. An **asterisk(*)** appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

4. The **letters "NR"** appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

Priority date	Priority application No.	Country or regional Office or PCT receiving Office	Date of receipt of priority document
22 Dece 1998 (22.12.98)	9828346.8	GB	31 Janu 2000 (31.01.00)
20 Janu 1999 (20.01.99)	9901233.8	GB	26 Janu 2000 (26.01.00)
20 Janu 1999 (20.01.99)	9901234.6	GB	04 Febr 2000 (04.02.00)
12 Apri 1999 (12.04.99)	9908321.4	GB	26 Janu 2000 (26.01.00)
24 May 1999 (24.05.99)	9912036.2	GB	04 Febr 2000 (04.02.00)
23 Sept 1999 (23.09.99)	9922596.3	GB	04 Febr 2000 (04.02.00)

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Authorized officer

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